

**REMARKS**

The Office Action mailed on August 5, 2008, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1 and 3-13 were pending. By this paper, Applicant does not add or cancel any claims. Therefore claims 1 and 3-13 remain pending.

Applicant respectfully submits that the present application is in condition for allowance for at least the reasons that follow.

**Rejoinder of Claim 13**

Claim 13 is asserted to cover a separate invention from that of the apparatus claims “because the process can be practiced by a fuel cell system not comprising a controller in a manual operation.”

In response, Applicant has amended method claim 13 to recite a controller, and thus respectfully requests rejoinder of claim 13.

**Rejections Under 35 U.S.C. § 112, Second Paragraph**

Claims 1-12 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In response, Applicant respectfully traverses this rejection.

The Office Action asserts that the recitation of claim 1 regarding nitrogen concentration of the fuel gas in the recirculation system being “controlled to be maintained at a target nitrogen concentration” in claim 1, lines 9-10 is a relative term.” (Office Action, page 3, last paragraph, emphasis added.) Yet the MPEP makes explicitly clear that relative terminology is permitted in a claim. MPEP §2173.05(b), entitled “Relative Terminology,” states that the “fact that claim language, including terms of degree, may not be precise, does not automatically render the claim indefinite.” (Emphasis added.)

The Office Action asserts that “the specification does not provide a standard for ascertaining the requisite degree.” In response, Applicant points to page 6, lines 4-25, and Fig. 3, where “a target nitrogen concentration” is disclosed as “Cnr.” “Cnr” is the nitrogen

concentration in the fuel recirculation system  $R_c$ , which corresponds to the minimum ejector-circulating hydrogen flow rate  $Q_{cr}$  required for steady operation of the fuel cell stack (1).

Still further, the Office Action has not demonstrated that “one of ordinary skill in the art would not be reasonably apprised of the scope of the invention,” as is asserted in the Office Action. Instead, all that is present is the accusation of such. It is respectfully submitted that the Office Action appears to assert that the claims are indefinite simply because questions may be asked by an examiner about the terms in the claims. The standard for indefiniteness is not whether an examiner may proffer a question about a claim term or phrase, *but whether those claim terms have meaning to the skilled artisan.* In this regard, Applicant respectfully submits that claims are to be evaluated with the ordinary skill test: “Acceptability of the claim language depends on whether one of ordinary skill in the art would understand what is claimed, in light of the specification.” (MPEP §2173.05(b), emphasis added.) Applicant respectfully submits that one of ordinary skill would readily understand the meaning of the terms/phrases in the claims, and no evidence has been proffered to the contrary.

Applicant submits that it is the PTO’s burden to provide evidence showing that language of a claim is indefinite, and that mere conclusory statements of indefiniteness are not sufficient, especially in view of the fact that the specification contains sufficient teachings to permit one of ordinary skill in the art to understand the claims. Accordingly, the mere fact that terminology utilized in the claims may raise questions in an examiner’s mind does not mean that that terminology is indefinite under 35 U.S.C. §112, second paragraph.  
Reconsideration is requested.

#### Rejections Under 35 U.S.C. § 102

Claims 1 and 3-13,<sup>1</sup> stand rejected under 35 U.S.C. § 102 as being anticipated by Simpson (U.S. Patent Application Publication No. 2004/0161657). In response, in order to advance prosecution, and without prejudice or disclaimer, Applicant has amended claim 1

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<sup>1</sup> Claim 13, while being indicated as withdrawn on page 2 of the Office Action, is indicated as being rejected in view of the prior art on page 4 of the Office Action.

(and claim 13), as seen above, and respectfully submits that the claims are allowable for at least the following reasons.

Applicant relies on MPEP § 2131, entitled “Anticipation – Application of 35 U.S.C. 102(a), (b), and (e),” which states that a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Section 103 amplifies the meaning of this anticipation standard by pointing out that anticipation requires that the claimed subject matter must be “*identically* disclosed or described” by the prior art reference. (Emphasis added.) Note further that for anticipation, “every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim.” (*Brown v. 3M*, 60 USPQ2d 1375 (Fed. Cir. 2001), emphasis added.)

Claim 1 recites a fuel cell system. As amended, with reference to the teachings of the specification as an exemplary embodiment, claim 1 recites that the controller is adapted to adjust the valve opening of the purge valve 8 to maintain a flow rate of fuel in the fuel gas passing through the purge valve 8 at a threshold Qph0 set in accordance with operation conditions of the fuel cell system and the valve opening of the purge valve 8, by reducing the valve opening of the purge valve 8 if the flow rate of fuel in the fuel gas passing through the purge valve 8 is more than the threshold Qph0, and increasing the valve opening of the purge valve 8 if the flow rate of the fuel gas passing through the purge valve is less than the threshold Qph0. As recited, the nitrogen concentration in the recirculation system of the fuel cell system *is controlled to be maintained at a target nitrogen concentration, which, in an exemplary embodiment of claim 1, is a constant nitrogen concentration.* In the exemplary embodiment of the invention of claim 1, the amount of fuel to be discharged out of the system is limited, thereby enhancing performance of the fuel cell system.

Simpson discloses a purge control device 72 to purge a portion of anode exhaust out of the recirculation line 60. “The frequency and flow rate of the purge operation is dependent on the power on which the fuel cell 12 is running. When the fuel cell 12 is running at high power, it is desirable to purge a higher portion of anode exhaust.” (Simpson, paragraph 0026).

However, this purging operation is executed to simply reduce the concentration of nitrogen and other impurities in the anode exhaust, and to blow water generated by the reaction in the fuel cell out of the recirculation line 60, by discharging a portion of anode exhaust out of the recirculation line 60. The reason why the higher portion of anode exhaust is discharged at high power operation is that the amount of water generated by the reaction in the fuel cell increases at the high power operation. *Therefore, the purging operation in Simpson is does not maintain the nitrogen concentration in the anode exhaust in the recirculation line 60 at a target nitrogen concentration.* Simpson is silent about maintaining a flow rate of fuel in the fuel gas passing through the purge valve 8 at a threshold.

Moreover, as noted above, Simpson operates to change the flow rate through the purge valve: “The frequency and flow rate of the purge operation is dependent on the power on which the fuel cell 12 is running.” (Simpson, paragraph 0026, emphasis added.) In contrast, claim 1 recites a controller adapted to “adjust the valve opening of the purge valve to maintain a flow rate of fuel in the fuel gas passing through the purge valve at a threshold.” (Claim 1, emphasis added.) Thus, Simpson teaches the opposite of claim 1, and thus cannot anticipate claim 1.

Claim 1 is not anticipated, because Simpson simply does not teach “every element and limitation of the claimed invention . . . arranged as in the claim.” (*Brown v. 3M*, 60 USPQ2d 1375 (Fed. Cir. 2001), emphasis added.) Reconsideration is requested.

### Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a

check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Suitte is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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